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ALCOHOL USE BY DRIVERS FATALLY INJURED IN MOTOR VEHICLE ACCIDENTS: 1990 AND THE PAST TEN YEARS

Background:

This leaflet provides information on blood alcohol concentration (BAC) determined for drivers fatally injured in motor vehicle accidents in the Canadian provinces and territories. The information is derived from the Traffic Injury Research Foundation (TIRF) Fatality Database[1], which consists of data collected from provincial coroners' or medical examiners' reports and reports prepared by investigating police officers. These data are supplied by provincial agencies.

Information has been compiled since 1973 for seven provinces (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick and Prince Edward Island). In 1985, Nova Scotia was added to the database followed by Newfoundland in 1986. In 1987, similar data from Quebec and the two territories became available, making the fatality database representative of all the provinces and territories.

In reporting the data in the figures to follow, a number of conventions have been adopted. The reader should be aware that:

1. The percentages expressed are the percent of drivers tested for blood alcohol concentration. About 80.5% of fatally injured drivers across Canada were tested for alcohol use in 1990, compared to 78.5% in 1989.

2. The 1990 and comparative 1989 results include data from all provinces and territories in Canada and are based on victims dying within twelve months of the accident. The ten-year results (1981-1990) are based on data from the original seven provinces and include victims whose death occurred within six hours after the accident, a convention established in previous years.

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1. The TIRF Fatality Database is financially supported by the Canadian Council of Motor Transport Administrators (CCMTA) and Transport Canada.

3. The data include only fatally injured drivers of the principal types of motorized vehicles on public roadways, i.e., automobiles, non-articulated trucks/vans, motorcycles, tractor-trailers. There were no fatally injured bus drivers in the 1990 data. Excluded are snowmobiles, other off-road vehicles, bicyclists, pedestrians and passengers.

4. BACs are reported in milligrams per 100 milliliters of blood, (e.g., .08 = 80 mg% BAC). The percentage of drivers which had been drinking prior to the accident (BAC greater than 1 mg%) and the percentage which were legally impaired (BAC exceeding 80 mg%) are shown separately in the following figures. For clarity, Figures 5 to 7 show only the percent legally impaired.

1990 Characteristics:

In 1990, 1756 out of 2181 fatally injured drivers were tested for level of alcohol in the blood. Among tested drivers, 45.4% had been drinking, a decrease from 46.5% in 1989; 36.6% of tested drivers were legally impaired, a decrease from 38.8% in 1989.

Figures 1 to 3 present data from all of the provinces and the two territories for 1990. Figure 1 shows the percent of fatally injured drivers who had been drinking and the percent legally impaired for each province. (For the Yukon and Northwest Territories, see Table 1 of the Appendix.) Although there appears to be considerable variation among provinces, it must be emphasized that the percentages for the smaller provinces are less reliable (i.e., more subject to chance variation) than those for larger provinces. In addition, the range of testing was from 67.9% for Quebec to 92.7% for British Columbia. Percentages based on lower rates of testing should be interpreted with caution because there is a possibility of selection bias, i.e., drivers suspected of impairment may be more likely to have been tested.

Of the 1756 drivers tested, 80.5% were male and 19.5% were female. Among males, 49.6% had been drinking compared to 28.0% of the females. The corresponding rates of illegal impairment were 40.6% for males and 20.1% for females (figure not provided). Figure 2 shows that among different age groups, the highest proportion of alcohol impairment occurred among 26-35 year olds (48.7%) and then steadily declined after age 35. Examination of BAC by vehicle type (Figure 3) reveals that truck/van (excluding tractor-trailer) drivers had the highest rate of alcohol impairment, followed by motorcycle drivers and automobile drivers. Alcohol use was considerably higher among fatally injured motorcycle drivers and truck/van drivers than automobile drivers.

Trends During the Past Ten Years:

Figures 4 to 7 present data for the ten-year period, 1981 to 1990. To maintain consistency from year to year, only data from the original seven provinces have been aggregated. Findings are based on victims whose death occurred within six hours after the accident.

Figure 4 shows that the general downward trend from 1981 continued in 1990. In that year, the percentage of drivers who had been drinking (41.7%) and the percentage of drivers who were legally impaired (34.6%) was lower than that of any previous year.

Figure 5 shows that over the ten-year period, female drivers killed are consistently less likely to be impaired by alcohol than are males. In 1990, alcohol impairment among males (38.7%) declined while impairment among females rose to 18.4% from the 1989 level.

Figure 6 shows that the overall downward trend is not exhibited equally by all age groups. The age groups under 25 years showed the largest decreases over ten years, and the downward trend continued in 1990. The 26-35 years group showed little change over time until 1989 where the percentage impaired decreased by 9% from 1988. A further decrease of 1.2% occurred in 1990. The downward trend exhibited by the 36-45 years group continued very slightly in 1990, while the rate for the 46 and over group increased slightly.

Figure 7 demonstrates that over the ten-year period, fatally injured drivers of trucks/vans (excluding tractor-trailers) had the highest rate of impairment, followed by motorcycle drivers. The rate for van/truck drivers (45.0%) declined in 1990 and the rate for motorcycle drivers increased dramatically from 39.3% to 44.7%, an increase of 5.4%. The declining trend for automobile drivers continued in 1990 with a rate of 30.5%. Tractor-trailers are not included in Figure 7 because the small number of fatalities in this group results in unreliable year-to-year fluctuations.

For further information write to:

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Figure 1

Distribution of Blood Alcohol Concentration Among Fatally Injured Drivers by Province: 1990

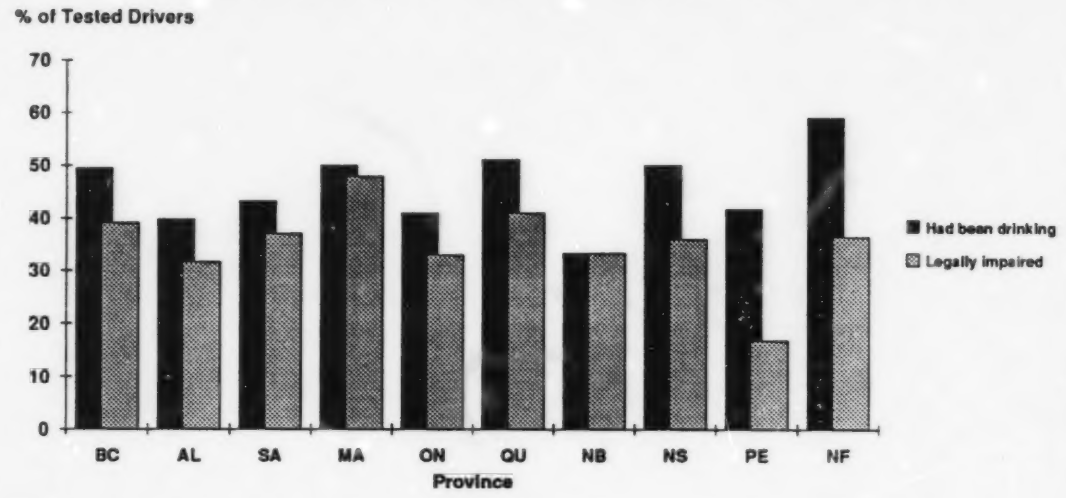


Figure 2

Distribution of Blood Alcohol Concentration Among Fatally Injured Drivers by Age: 1990 (Canada)

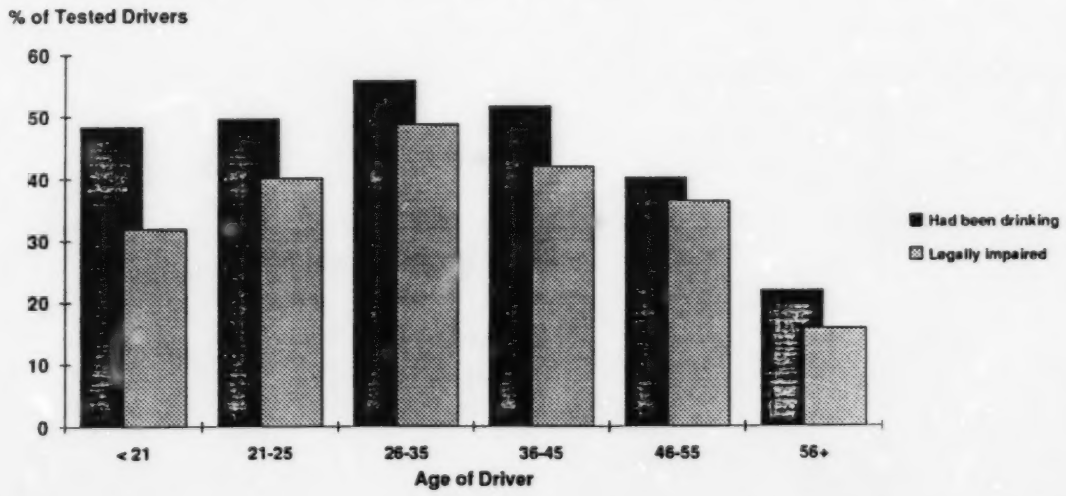


Figure 3

Distribution of Blood Alcohol Concentration Among Fatally Injured Drivers by Vehicle Type: 1990 (Canada)

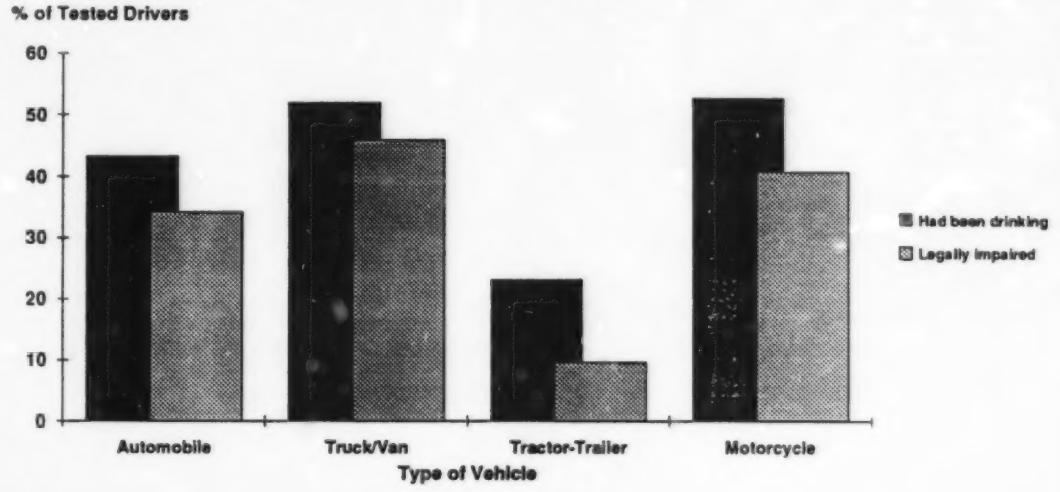


Figure 4

Distribution of Blood Alcohol Concentration Among Fatally Injured Drivers: (Seven Provinces)

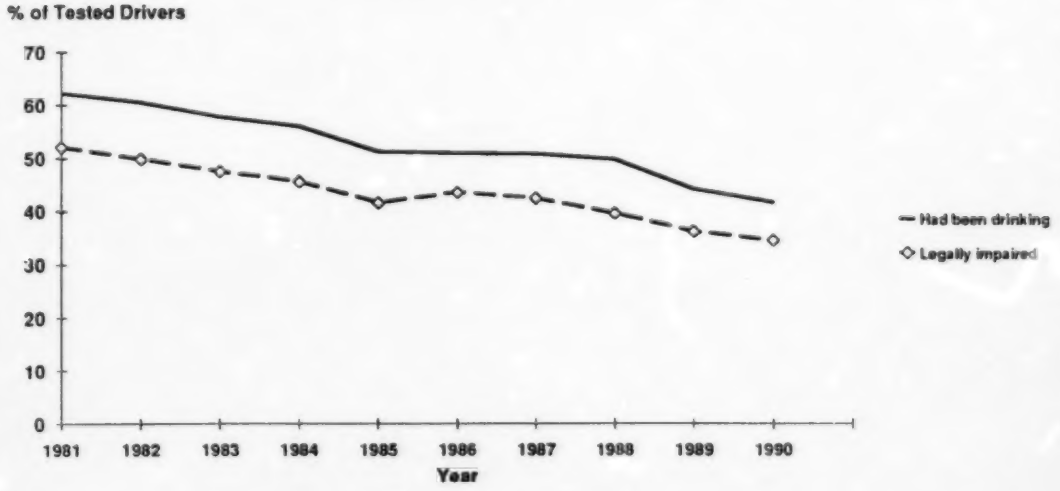


Figure 5

Percent of Fatally Injured Drivers with Illegal Blood Alcohol Concentration by Sex: (Seven Provinces)

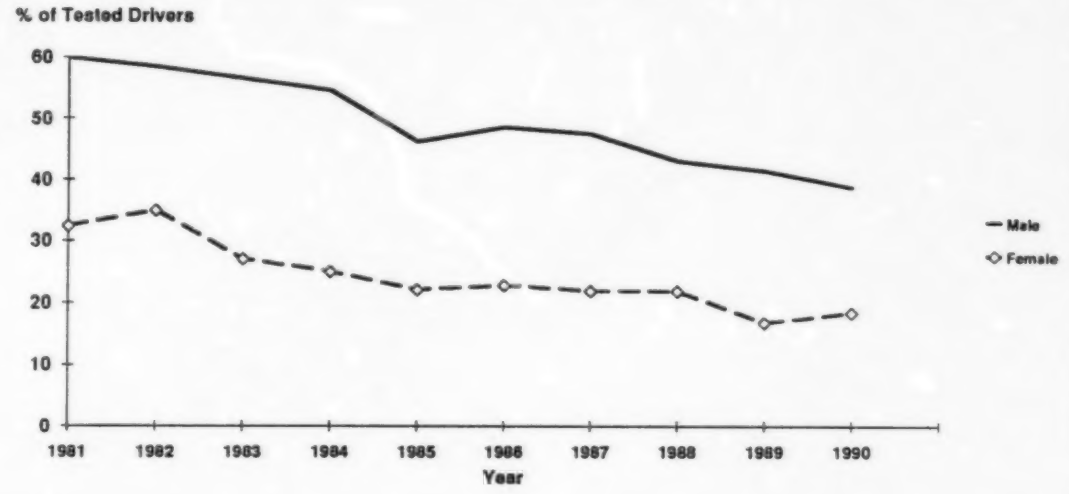


Figure 6

Percent of Fatally Injured Drivers with Illegal Blood Alcohol Concentration by Age Group: (Seven Provinces)

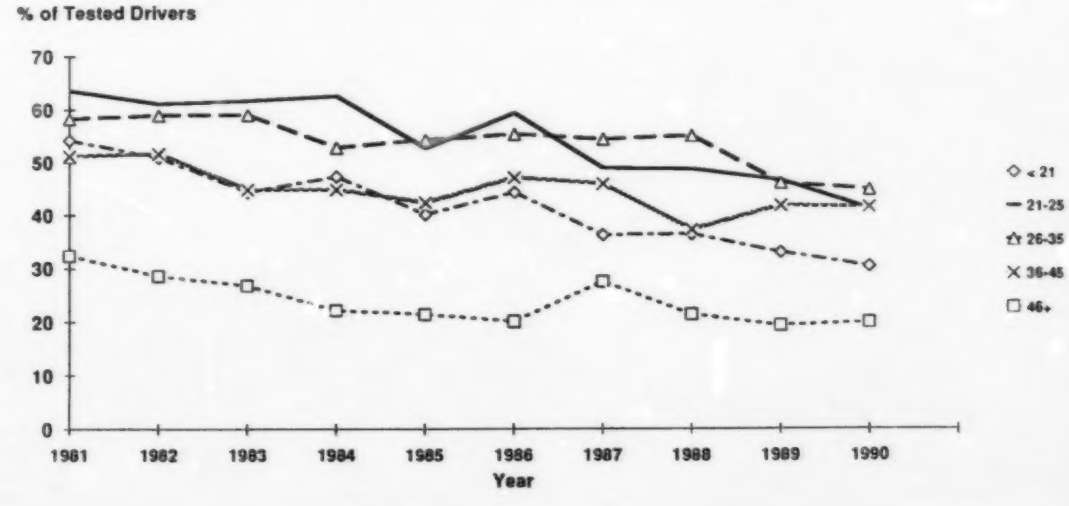
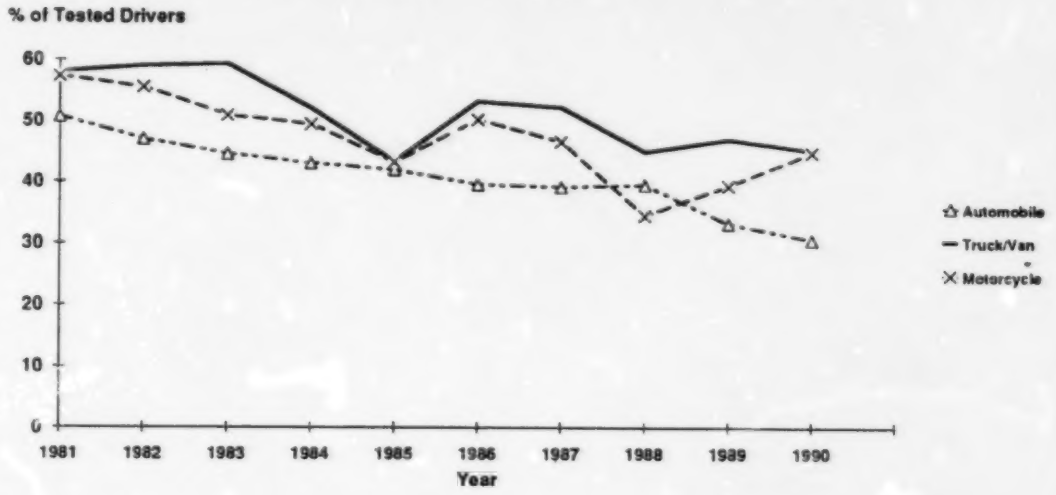


Figure 7

Percent of Fatally Injured Drivers with Illegal Blood Alcohol Concentration by Vehicle Type: (Seven Provinces)



APPENDIX

Corresponding Data for Figures 1-7*

Table 1

Distribution of BAC among fatally injured drivers by province/territory:
1990 (Death within 12 months)

Province	Number of drivers tested	Percent of tested drivers >1 mg%	>80 mg%
British Columbia	317	49.5	39.1
Alberta	209	39.7	31.6
Saskatchewan	81	43.2	37.0
Manitoba	50	50.0	48.0
Ontario	521	40.9	33.0
Quebec	395	51.1	41.0
New Brunswick	78	33.3	33.3
Nova Scotia	64	50.0	35.9
Prince Edward Island	12	41.7	16.7
Newfoundland	22	59.1	36.4
Yukon	6	83.3	66.7
Northwest Territories	1	100.0	100.0
TOTAL	1756	45.4	36.6

Table 2

Distribution of BAC among fatally injured drivers by age:
1990 (Canada; death within 12 months)

Age Group	Number of drivers tested	Percent of tested drivers >1 mg%	>80 mg%
< 21	254	48.4	31.9
21-25	282	49.7	40.1
26-35	448	55.8	48.7
36-45	291	51.6	41.9
46-55	157	40.1	36.3
56+	324	21.9	15.7

* e.g., Table 1 corresponds to data shown graphically in Figure 1.

Table 3

Distribution of BAC among fatally injured drivers by vehicle type:
1990 (Canada; death within 12 months)

Vehicle Type	Number of drivers tested	Percent of tested drivers >1 mg%	>80 mg%
Automobile	1169	43.3	34.2
Truck/Van	366	51.9	45.9
Tractor-Trailer	52	23.1	9.6
Motorcycle	169	52.7	40.8

Table 4

Distribution of BAC among fatally injured drivers:
1981-1990 (seven provinces; death within 6 hours)

Year	Percent of tested drivers >1 mg%	>80 mg%
1981	62.2	52.1
1982	60.5	49.9
1983	57.8	47.6
1984	56.0	45.7
1985	51.3	41.7
1986	51.0	43.6
1987	50.8	42.5
1988	49.8	39.7
1989	44.2	36.3
1990	41.7	34.6

Table 5

Percent of fatally injured drivers with illegal BAC by sex:
1981-1990 (seven provinces; death within 6 hours)

Sex	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Male	59.9	58.4	56.5	54.5	46.2	48.5	47.4	43.0	41.4	38.7
Female	32.4	34.9	27.0	25.0	22.1	22.8	21.9	21.9	16.8	18.4

Table 6

Percent of fatally injured drivers with illegal BAC by age:
1981-1990 (seven provinces; death within 6 hours)

Age	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
< 21	54.2	50.9	44.3	47.3	40.1	44.2	36.2	36.3	33.0	30.4
21-25	63.5	61.1	61.6	62.4	52.6	59.2	48.8	48.6	46.5	41.2
26-35	58.3	59.0	59.0	52.8	54.1	55.2	54.3	55.0	46.0	44.8
36-45	51.3	51.7	44.8	44.8	42.3	47.0	45.8	37.2	41.8	41.5
46+	32.4	28.6	26.8	22.1	21.4	20.0	27.5	21.4	19.3	19.9

Table 7

Percent of fatally injured drivers with illegal BAC by vehicle type:
1981-1990 (seven provinces; death within 6 hours)

Vehicle Type	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Automobile	50.6	46.9	44.5	43.0	41.9	39.5	39.1	39.5	33.1	30.5
Van/Truck	58.0	59.0	59.3	52.0	43.2	53.1	52.1	44.8	46.8	45.0
Motorcycle	57.3	55.5	50.8	49.4	43.1	50.1	46.5	34.4	39.3	44.7